

CLAIMS

What is claimed is:

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1. A telecommunications switch comprising:
 - a plurality of optical inputs;
 - a plurality of optical outputs;
 - an optical switch that operates with a schedule not directly determined by the input stream; and
 - a plurality of reordering units that rearrange the order of data units within data streams to correspond to the schedule of the switch.
 - 10 2. A telecommunications switch as claimed in claim 1 wherein the switch is a crossbar.
 3. A telecommunications switch as claimed in claim 1 wherein the reordering units rearrange the order of data units in an input data stream.
 - 15 4. A telecommunications switch as claimed in claim 1 wherein the reordering units rearrange the order of data units in an output data stream.
 5. A telecommunications switch as claimed in claim 1 wherein the switch is a multi-stage interconnection network.
 6. A telecommunications switch as claimed in claim 1 wherein each reordering unit is a time-slot interchanger.
 - 20 7. A telecommunications switch as claimed in claim 6 wherein each time-slot interchanger contains a plurality of FIFOs.

8. A telecommunications switch as claimed in claim 7 wherein the FIFOs are implemented as circular buffers in a single dual port memory.

9. A telecommunications switch as claimed in claim 1 where in the switch schedule is fixed and balanced.

5 10. A telecommunications switch as claimed in claim 1 wherein the switch schedule is unbalanced.

11. A telecommunications switch as claimed in claim 10 wherein the switch schedule is determined by the average load between inputs and outputs.

10 12. A telecommunications switch as claimed in claim 11 wherein the switch schedule is determined by the number of data units queued from each input for each output in time-slot interchangers.

13. The method of switching data streams comprising:
operating an optical switch with a schedule not directly determined by the input stream; and
rearranging the order of data units within data streams to correspond to the schedule of the switch.

14. A method as claimed in claim 13 wherein the switch is a crossbar.

15. A method as claimed in claim 13 wherein the rearranged data stream is an input data stream.

20 16. A method as claimed in claim 13 wherein the rearranged data stream is an output data stream.

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reordering means for rearranging the order of data units within data streams to correspond to the schedule of the switch means.

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